Want to find an actual swamp to visit?

CLICK HERE → **http://www.natureworkspress.com/SwampSites/VisitASwamp.html**

(if this link takes a moment to become active, browse the book below)

The following pages are from the book-in-progress,

The Southern Swamp Explorer

by Irene Brady

scheduled for publication in 2007

Red-bellied Woodpecker

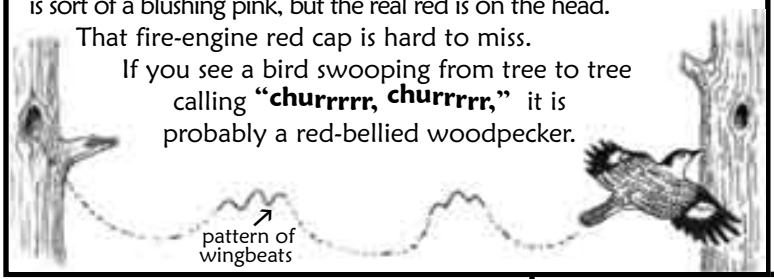
Melanerpes carolinus (mel-un-ER-peez cair-oh-LIE-nus)
Melanos = "black" **herpes** = "creeper" **carolinus** = "of Carolina"

To the Cherokee Indians, the red-bellied woodpecker, whom they called *Dalala*, symbolized war – perhaps because of its red head and neck which made it seem to be wearing a headdress, or maybe because it seemed to be scalped.

These charming birds are common in open woods around swamps. They're fairly tame and easy to find and watch, although if you're looking for a "red belly" you may not see one – the lower belly is sort of a blushing pink, but the real red is on the head.

That fire-engine red cap is hard to miss.

If you see a bird swooping from tree to tree calling **"churrrrr, churrrrr,"** it is probably a red-bellied woodpecker.

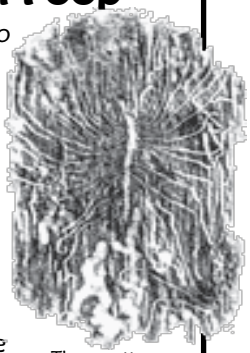


Guano - The Real Poop

Bird poop is called *guano* (GWAH-noh). It makes great fertilizer because it is rich in nitrogen, phosphate and other nutrients. Rookeries produce LOTS of guano.

Rookery trees grow greener and larger from the birds' guano at first, but soon the guano acids begin to kill them. The weakened trees may be invaded by woodboring beetles – great woodpecker food.

Diseases may enter the tree through beetle tunnels. When the trees die, their trunks, branches and roots are recycled into the soil, enriching it for new plants and animals, continuing the endless circle of life.

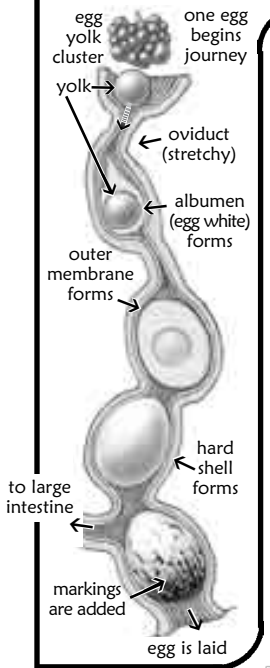


These patterns on wood are the tunnels of small woodboring beetles.

metallic woodboring beetle, natural size

To Make an Egg

An egg, much like the one you eat for breakfast (but fertilized) is released into a bird's oviduct from a cluster of eggs in the ovary. Here's what happens next (usually one egg at a time):



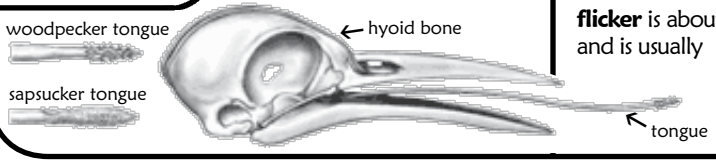
Tongue Tool

A woodpecker has an amazing tongue. It probes under and into bark to spear an insect with the tongue's sharp barbs

A sapsucker (a type of woodpec soaks up sap with a feathery tongue bru

The tongue hooks to the stretchy *hyoid* (HY-oyd) bone, which then branches and travels under, then up over the skull to anchor in the woodpecker's right nostril (see the drawings).

The hyoid bone lets the tongue extend **way** out to probe, then pulls it back.



Woodpecker Woodworkings

Who's that beating on a drum out in the swamp – a gentle rolling drum tattoo? It may be a **red-bellied woodpecker.**

So, what's it doing? It might be advertising its territory to other males, drilling a dead or dying tree for insects, or excavating a nest hole. A red-bellied woodpecker's round hole is about two inches across.

Watch for excavations of **pileated** (PY-lee-ay-tid) and **ivory-billed woodpeckers.** These large woodpeckers make big rectangular holes while drilling for burrowing insects. Regular reports of ivorybills indicate they may not be extinct as once thought.

The entrance hole of a **flicker** is about 2¾" wide, and is usually drilled in a dead tree or stump.

While the entrance to the nest of an endangered **red-cockaded woodpecker** nest is about the same size as that of a red-bellied woodpecker, the red-cockaded woodpecker drills only into living pines with heartwood disease. This makes the injured tree drip gooey pitch all around the hole, which keeps snakes from crawling inside to eat the chicks.

A **yellow-bellied sapsucker** drills holes in living trees. The holes fill with sap, which it licks up with its feathery tongue (see at far left). It also returns frequently to eat any insects that have become trapped in the sap. Wasps and other birds also feed at the holes.

10. The Red-bellied Woodpecker

The stinky guano and the noise advertised the rookery's location to any creature with ears or a nose. But the rookery was protected from predators – most wouldn't swim out to the island through the alligator-patrolled swamp. The swamp made a perfect *moat* or water barrier around the rookery

Some of the trees were dying. This didn't make them any less usable as homes for the herons and other wading birds. In fact, it actually made them simpler to land in and it was easier for the birds to see danger and give a warning, or launch into flight to chase a hawk or crow. On the downside, the trees didn't offer much protection to the chicks from the hot sunshine, and chicks were more exposed to attack from the air by crows, vultures and grackles who sometimes robbed unprotected nests of eggs and small chicks.

But for some of the rookery dwellers, those things weren't a problem – because they lived safely *inside* the dead trees.

A courting pair of red-bellied woodpeckers were inspecting decaying rookery trees. Red crowns flashing in the sunshine, they swooped from tree to tree, lanc ing and inspecting each one, tappir loudly, calling **"CHAR-r-r-r! CHAR-r-r-CHAR-r-r-r!"** to each other as th searched.

They decided on a location nea center of the rookery, and the male to excavate a hole about fifteen fe the ground in one of the trees. The joined him and they both worked taking turns pecking and excavating. The wood out the opening. It took the two week to carve out a nest about twelve inc in diameter. Exhausted by the difficult j sleeping and gathering their strength for female laid four white eggs in the clean about to begin, the raising of their family

There were several other holes in their home tree. For many seasons, pileated woodpeckers had been drilling for wood-boring beetles in the decaying tree. Below the red-bellied woodpecker nest, a level branch jutting out from a pileated woodpecker excavation like an apartment balcony was a daytime roost for a chuck-will's-widow.

Chuck-will's-widow

Caprimulgus carolinensis (cap-rih-MUL-gus cair-oh-lih-NEN-sis)
Caper = "goat" **mulgeo** = "to suck" **carolinensis** = "of Carolina"

The chuck-will's-widow has many peculiar names, starting with its family name, which means goatsucker (see at right). But rather than sucking on goats, the chuck-will's-widow is busy eating all kinds of insects and loudly calling ***"CHUCK-WIDDLES-WIDOW"*** during late afternoons and on moonlit summer nights. Its call has a bubbly sound like water running over rocks into a pool.

It's also called "chicka-willa," "chuck," "mosquito-hawk" and "nightjar." Nightjar refers to the jarring, sleep-wrecking cries it makes after dark. One moonlit night, a chuck-will's-widow was heard to make 840 calls without stopping.

It may sit on warm roads after dark, darting into the air for insects. If you're on a country road at night and see two red lights rise into the air and disappear, it may be a chuck-will's-widow – one of the few birds with red eyeshine.

Goatsuckers

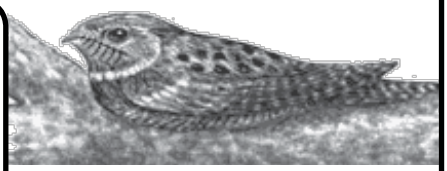
A chuck-will's-widow is in a family of birds called goatsuckers. This strange name supposedly got started when people long ago noticed birds that are related to chuck-will's-widows hanging around goats, where they may have been catching flies that buzz around livestock.

Their huge mouths were about the right size to fit around a goat's teat. So a whole group of birds, which also includes whip-poor-wills, nighthawks and others got named **goatsuckers!**

Hiding In Plain Sight

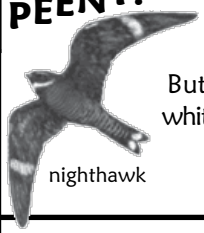
Imagine walking through the woods, watching the ground carefully for mushrooms or whatever, when a pile of leaves which ***you are looking straight at*** suddenly sprouts wings, flits silently up off the ground and disappears into the woods like a gigantic twelve-inch-long moth with a two-foot wingspread. WHAT WAS THAT?!

A chuck-will's-widow had been on the leaves almost at your feet and you didn't see it even though you looked right at it!



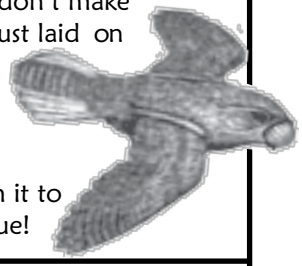
You have just experienced *cryptic* (KRIP-tik = concealing) *coloration.* A chuck-will's-widow is almost invisible if it doesn't move. In trees, it perches parallel on branches, blending into the outline of the limb. Even if you often hear them call, you may never see one.

PEENT!



Chuck-will's-widows look a lot like the closely related nighthawks (also called nightjars) But flying nighthawks show big white bands on their pointy wings, and their cry is a high, rising **"peent!"**

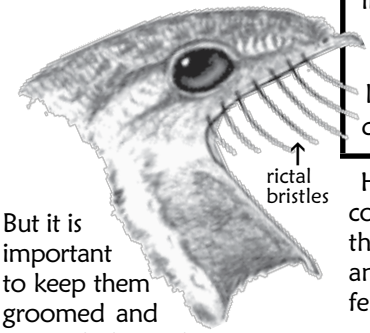
The Great Egg Escape



Chuck-will's-widows don't make real nests – the eggs are just laid on dry leaves. Keep your distance. If you even **touch** them, each parent may pick up an egg in its mouth and fly away with it to a safer place. Odd, but true!

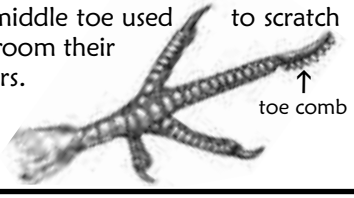
Rictal Bristles

Rictal (RIK-tull) bristles around the chuck-will's-widow's open mouth may help scoop up insects. They may also sense insect wing vibrations and improve the bird's aim. We aren't sure.



But it is important to keep them groomed and untangled, so the chuck-will's-widow carries a comb.

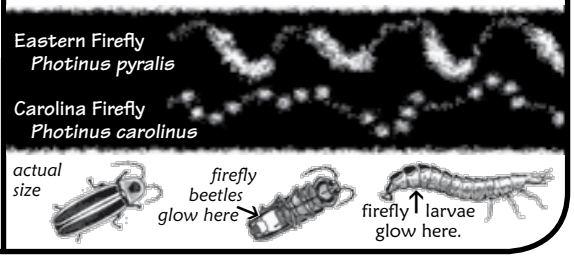
Herons and barn owls have similar combs – little teeth on the claw of their middle toe used to scratch and groom their feathers.



Night Lights

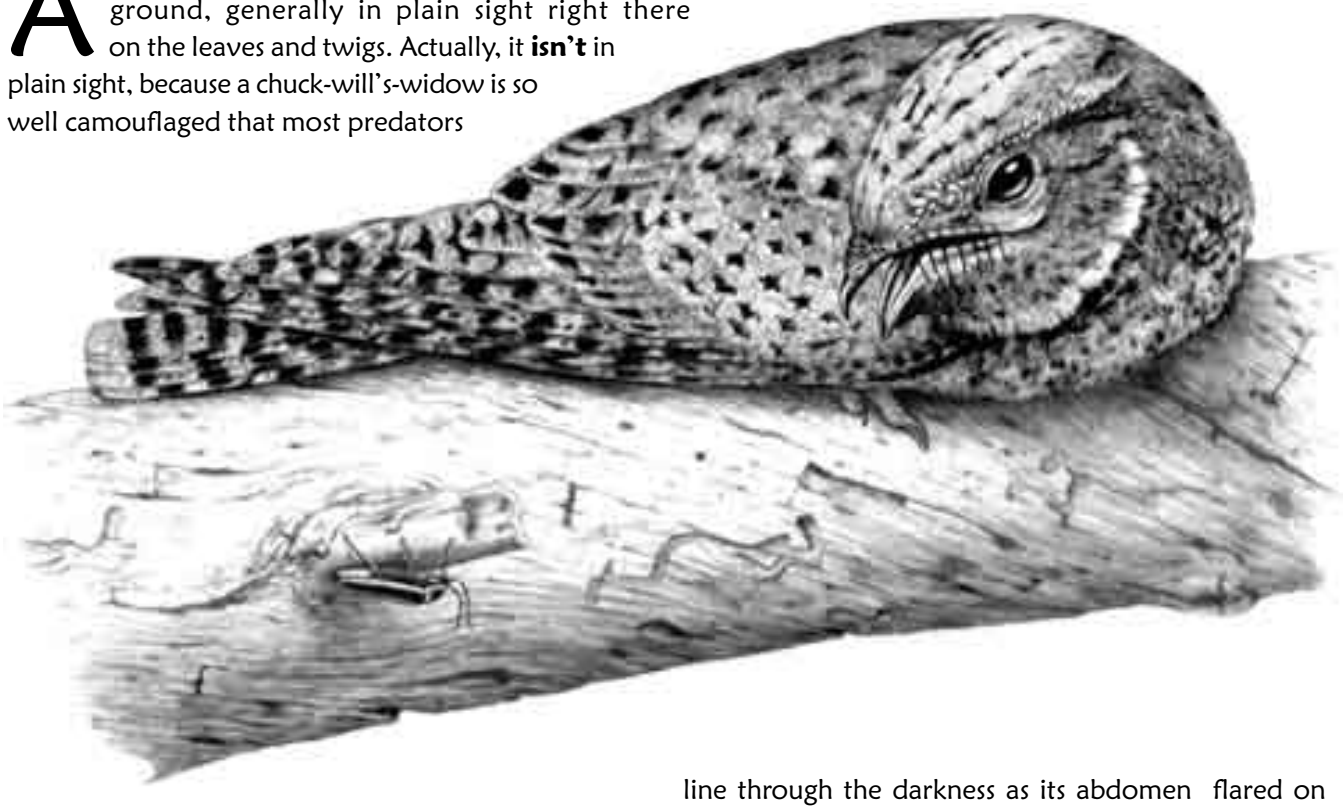
Swamps are habitat for many species of firefly or lightning bug. These beetles flash glowing areas on their abdomens on and off to attract mates. Each species blinks a different pattern.

Fireflies taste terrible so they have few enemies. Here are two blinking patterns:



11. The Chuck-will's-widow

A chuck-will's-widow usually builds its nest on the ground, generally in plain sight right there on the leaves and twigs. Actually, it **isn't** in plain sight, because a chuck-will's-widow is so well camouflaged that most predators



wouldn't notice it unless they stepped on it. When not on the nest, the chuck-will's widow may roost in a higher spot further above the ground.

This chuck-will's-widow had chosen to roost on a large level branch so close to the red-bellied woodpeckers' hole that the breeze from the woodpeckers' wings fanned his mottled feathers as they came and went from their entrance.

He rested parallel to the branch instead of crosswise as most birds do. His brown/grey/black speckled feathers were colored like bark, so he blended with the tree, disguised as a broken-off branch. He blinked lazily as he watched a firefly beetle moving along the branch, then went back to sleep. Chuck-wills are night birds and don't move about much during daylight – and they prefer to catch their food in the air.

As the evening shadows turned blue beneath the great cypresses and the roar of the rookery quieted to the occasional creaking of a nest and the yelps of chicks being pecked by their nestmates, the firefly launched into the air, disappearing then reappearing, a dotted line through the darkness as its abdomen flared on and off like a tiny flashlight.

The chuck-will's-widow opened his large, black eyes wide, and looked around. Then he yawned. Until then, his bill had seemed tiny – just a small black point on the front of his face. But as the two halves opened, the crack grew wider and wider, opening into a huge, gaping two-inch hole, big enough to gulp down a small bird. Stiff, curving whiskers framed the opening, ready to guide in any moth, beetle, fly, wasp or small bird that escaped his open maw.

The chuck-will's-widow closed his bill with a tiny snap and peered around. Below him, fireflies were now flying, twinkling like tiny sparklers, winking in and out of the darkness.

"CHUCK-WIDDLES-WIDOW" he burbled loudly. ***"CHUCK-WIDDLES-WIDOW, CHUCK-WIDDLES-WIDOW."*** Then he was gone, a flickering shadow in the dark.

He cruised through the air like a bat, gulping down whatever he came upon: beetles, fluttery moths, and swarms of mosquitos hatching from the dark, quiet backwaters of the swamp.

Anopheles Mosquito

Anopheles quadrimaculatus (an-OFF-ul-eez kwa-drih-mack-yew-LAY-tus)
Anopheles = "troublesome" **quadri** = "four" **maculatus** = "spotted"

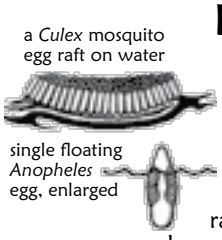
It's really hard to think ANY good thoughts about mosquitoes. But if there weren't any mosquitoes, the swamp would be an entirely different place. And maybe not a better place – because the many different species of mosquitoes are actually the "bread and butter" of a lot of swamp animals.

The lives of many fish, insects and their larvae, crawfish, frogs, and others *depend* on eating mosquito babies ("wigglers") that hatch from eggs laid in the calm swamp waters.

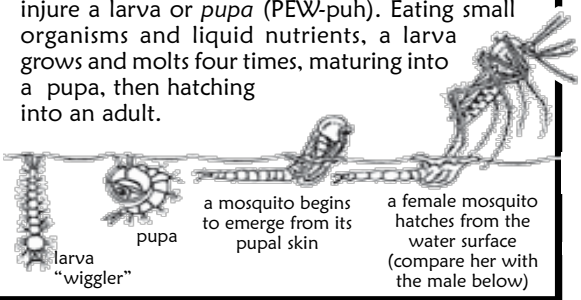
Eggs laid in rain-filled pails or old tires don't get eaten. You may have been bitten by mosquitoes hatching from these "pools." (What you could do to help solve that problem?)

How can you avoid getting bitten? Use insect repellent, don't wear dark clothes, stay behind mosquito netting or screens, and **don't breathe** – mosquitoes will follow the trail of the carbon dioxide (CO_2) you breathe out, right back to yummy you!

Egg Raft Styles



Mosquito *larvae* (LAR-vee = more than one larva) must mature in water. Some mosquito species lay hundreds of eggs which they glue together into floating rafts. The *Anopheles* mosquito lays single eggs, each kept afloat with an "inner tube" collar. Others lay their eggs on land which will flood later. Most mosquitoes lay eggs in calm water – rough or moving water could injure a larva or *pupa* (PEW-puh). Eating small organisms and liquid nutrients, a larva grows and molts four times, maturing into a pupa, then hatching into an adult.



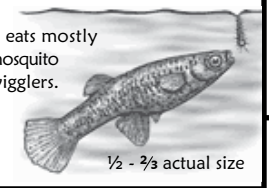
A Swamp Food Chain

Swamps depend on mosquito and other insect larvae to eat algae, decayed plant parts and animal microorganisms; then *they* are eaten by small carnivores like dragonfly nymphs, and by gambusia. Nymphs and gambusia are eaten by frogs, fish, turtles and other creatures; then *they* are gobbled by alligators, herons, otters, and so on. E*xcrement* (poop), plants and animals which die in the water decay and enrich the water, which causes algae to grow faster for insect larvae to eat..... Around and around it goes.

Poisons used to kill mosquitoes also kill many other organisms which the swamp ecosystem depends upon. Alien plant and animal invaders can mess things up, too. If any link in the chain of life is broken, it changes the balance of life in the swamp.

Gambusia

It's not a new dance – the *gambusia* (gam-BOO-zee-uh) is a mosquitofish, and native to our Southeastern swamps.



Spatterdock

Nuphar advena

The spatterdock or yellow pond lily is common in most cypress swamps. Every autumn it dies back and decays, adding its nutrients to the water. Many of the swamp creatures use it for shelter and food.

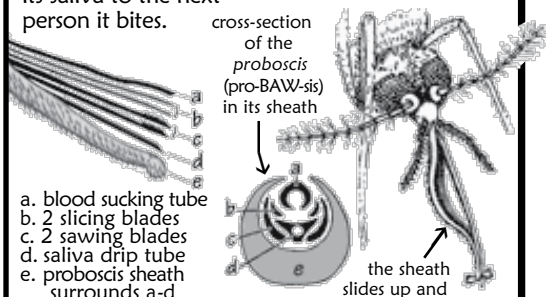
Blood Suckers *Macrobdella decora*

The prey of the freshwater leech is turtles, frogs, fish and other swamp visitors (maybe you). It holds on with toothy suckers, injects a numbing fluid, and drinks up to five times its own weight in blood. Then it lets go, and swims away, rippling like a ribbon in the water.

The site bleeds for awhile because an enzyme is added to keep the blood flowing. But the sucking didn't hurt and the wound doesn't get infected, so relax – no big deal.

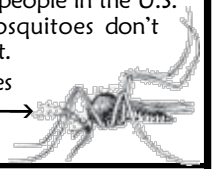
Mosquitoes Really Suck!

A mosquito pierces the skin with tiny blades, then sucks blood up one tube and drips saliva (filled with disease microbes and "blood thinner") down another to keep the blood flowing. If a mosquito sucks up blood from a sick person, it can pass on that disease in its saliva to the next person it bites.



The *Anopheles* mosquito, also called the malaria mosquito, can spread the terrible disease malaria. But since few people in the U.S. have malaria anymore, mosquitoes don't often spread it in the Southeast.

Male mosquitoes (the ones with feathery antennae) → suck plant juices, not blood.



Mosquito History

From mosquitoes preserved in amber, and fossils from forty million years ago, we know ancient mosquitoes looked almost the same as today's mosquitoes. Today there are more than 2000 mosquito species in the world; 121 species are in the US.

*Note: Sometimes **drastic** steps are needed to control **aliens** (non-native plants or animals). See page 102.

12. The Anopheles Mosquito

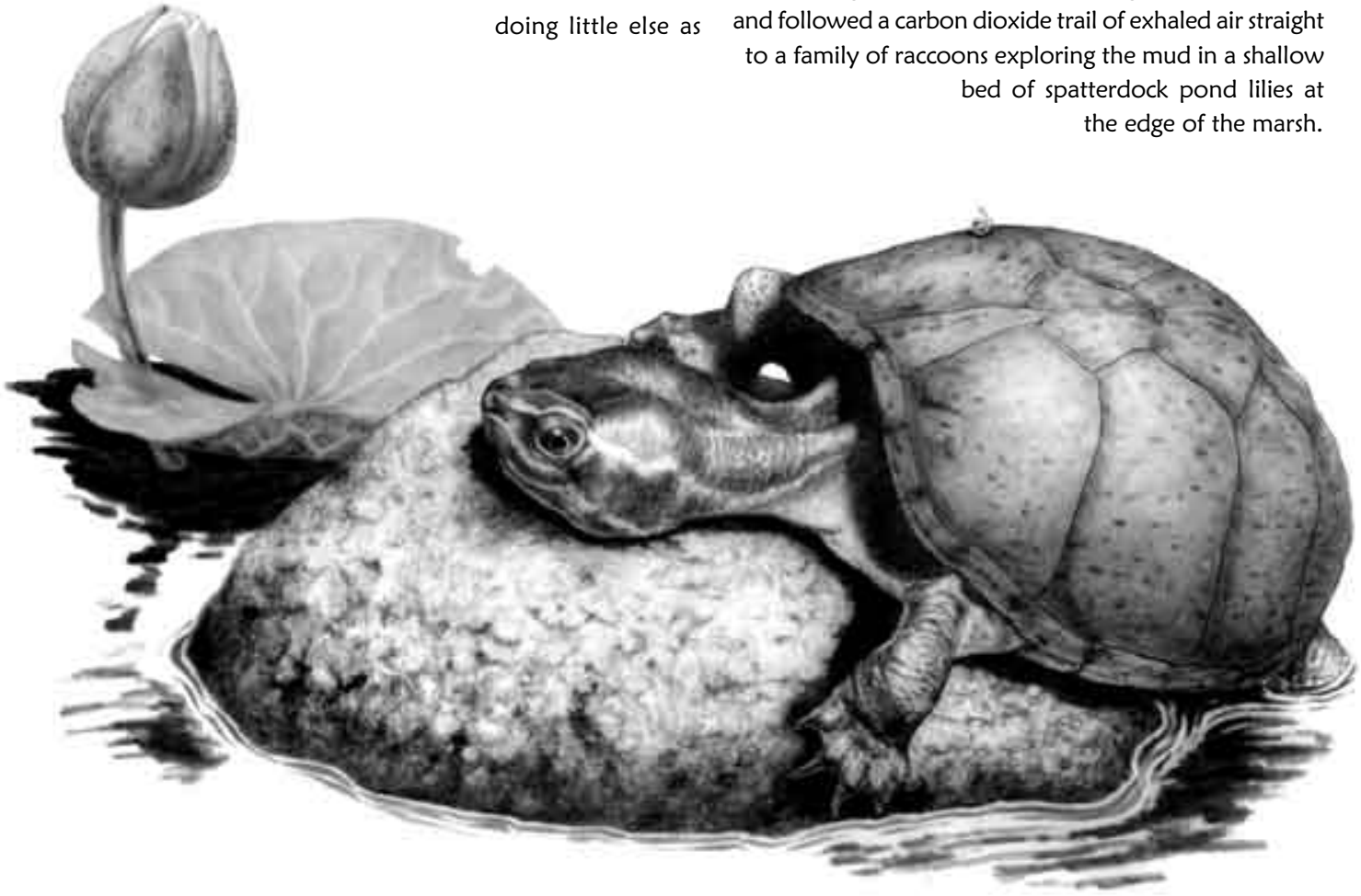
The female mosquito was flying low over the water, the whine of her wings wavering up and down as she dropped her eggs one by one into the water. Then... snap! She was engulfed in a cavernous mouth. She had laid only eleven eggs before she became the chuck-will's widow's snack. But the eggs would become mosquitos to take her place – if they were lucky.

In the warm water two to five days later, the little eggs developed into larvae "wigglers." Eating algae, tiny water creatures and decayed plant parts, they grew and shed their skins several times until they were ready to morph into pupae after about seven days. Only six of them made it this far. Two of the original eleven had been eaten by larger mosquito wigglers, and three had become lunch for dragonfly and damselfly nymphs.

The remaining wigglers curled and stiffened into dormant pupae. They floated just under the water's surface, breathing through tiny snorkel tubes on their backs but doing little else as they changed inside. If danger threatened they could dive, but in a short while they would rise again through the murky water to the surface. This, and breathing, seemed to be their only activity. Five more were lost at this point. One became stuck to a stinkpot turtle shell as the turtle climbed out on a rock to bask, and it fried in the hot sunshine, unable to wiggle enough to squirm off the turtle's shell. The other four were eaten by mosquitofish.

About two weeks after being dropped into the swamp water as an egg, the single surviving mosquito pupa hatched. As it floated on the surface of the water, its skin slowly split and a female mosquito rose up into the air out of the old skin like an inflating balloon. Resting on the raft of the shed skin, she waited for her wings to dry, then she flew off to search for a mate. Later that night she found one.

Once she had mated, she needed a feast of blood in order for her eggs to grow. The late afternoon air of the swamp sang with the whine of her flight as she detected and followed a carbon dioxide trail of exhaled air straight to a family of raccoons exploring the mud in a shallow bed of spatterdock pond lilies at the edge of the marsh.



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